

TO:

MR. WADE HARTWICK
U.S. EPA REGION V HSRL-6J
77 WEST JACKSON BLVD.
CHICAGO, IL 60604

The Office of Solid & Hazardous Waste Management Staff is pleased to make the following material available to you. If our staff may be of further assistance, please contact me at AC317/232 3264, or the address below.

Wade,

Here's the analytical info on the SMA for ACS. Let me know if there's anything else you need.

Thanks,
Steve

US EPA RECORDS CENTER REGION 5



466338

FROM: STEPHEN WEST

Office of Solid & Haz. Waste Mgmt.
Department of Environmental Management
105 South Meridian St.
Indianapolis, IN 46206-6015



Environmental Consultants

Division of ATEC Associates, Inc.

2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

September 4, 1991

9/4/91 K.T.
T.C. J.C.C.
Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

Mr. Mitch Mosier
Plan Review and Permit Section
Indiana Department of Environmental Management
105 South Meridian Street
P.O. Box 6015
Indianapolis, IN 46206-6015

Re: **Interim Status Report
And Expanded Background Data Base**
Former Solids Mixing Area
American Chemical Service, Inc.
IND 016360265
ATEC Project No. 52-17175

SEP 5 10 53 AM '91

Dear Mr. Mosier:

During the month of June, 1991, American Chemical Service, Inc. (ACS), initiated physical closure of the former solids mixing area in accordance with the approved closure plan and May 24, 1990 agreed order. This was performed under continuous observation by qualified ATEC Associates, Inc. (ATEC) personnel. This report is being provided in order to present the activities completed to date and also to present an expanded site specific background data base for soils at the facility.

As of this date, the concrete structure comprising the former solids mixing area has been dismantled, broken up and shipped off site for disposal. Additionally, approximately 700 cubic yards of potentially contaminated soils have also been excavated and shipped off site for disposal in general accordance with the May 24, 1990 agreed order and ATEC's interim report dated August 10, 1990. The final disposal facility for all potentially contaminated soil and debris is the Waste Management, Inc. landfill located in Wheeler, Indiana. Disposal at this facility was conducted in accordance with Office of Solid and Hazardous Waste Management Special Waste Disposal Approval, Case No. 807, signed by the Assistant Commissioner on August 3, 1990 as amended by Special Waste Disposal Assistant Commissioner on August 7, 1991. This work was conducted in the area shown in the attached Figure 2.

Based on the results of post-excavation subgrade sampling and analysis conducted at grid locations shown in Figure 2, heavy metal concentrations were found to somewhat exceed the initial background plus one standard deviation cleanup criteria summarized in Table 1 and presented in detail in ATEC's August 10, 1990 Interim Report. Analytical reports for subgrade sampling and analysis data are presented in the attached Appendix A. In these reports, sampling stations presented on Figure 2 correspond to sample I.D. numbers based on the last two digits,

i.e., sample B-102 corresponds to boring location B-2, etc. Depth increments from initial grade are also indicated in the reports so that direct comparisons to background based cleanup criteria can be made.

A review of excavation subgrade sample results indicates no particular spatial pattern as would reasonably be expected if elevated concentrations were the result of surficial deposition of waste materials. Soils observed at the base of the excavation appear to be a mixture of sands and relict vegetative organics and appear to reflect some sandy fill soils having been placed on natural low land soils. No visible indication of contamination or waste materials remains in the excavated area. The lack of a spatial pattern suggests that the measured concentrations of heavy metals are likely characteristic of the underlying site soils as a whole, and also likely reflect the influence of granular fill placed in the location of the former solids mixing area.

Initial background sampling efforts at this site were limited to a small area shown in Figure 1. While five borings were advanced, B-1, B-4, B-5, B-6 and B-7, these borings were clustered closely together in an area reported to have received no fill materials. As such, it is believed that the initial background sampling data base is too limited in aerial extent to be representative of the site as a whole.

In consideration of this finding, ATEC conducted additional background sampling and analysis on August 15, 1991. Locations of these samples are denoted as B-8, B-9 and B-10 and are presented on the attached Figure 1. In accordance with conditions listed in the May 24, 1990 agreed order, these locations were selected in areas of "no traffic, hazardous waste or manufacturing activities". As with the initial background sampling effort, samples were collected at each of six depth intervals, 0-6, 6-12, 12-18, 18-24, 24-36 and 36-48 inches.

Recognizing that initial background data remains useful even though the sampling points were clustered closely together, initial data was pooled and arithmetic means calculated for each metal at each depth interval. The mean concentrations for the initial background data were then pooled with the arithmetic means calculated for the new, much more widely spaced background data points and an overall arithmetic mean and standard deviation was calculated. For each depth interval, a revised cleanup objective was calculated by summing the mean for each depth interval with the respective standard deviation. Details of this calculation are summarized in Table 2. Analytical results for the additional background data points are presented in Appendix B.

Since the initial background data points are clustered closely together and results obtained from each of the initial five (5) borings are similar, ATEC believes that it is most appropriate to treat the initial background sampling data as a single, independent point. The recently gathered background locations are also each treated as separate independent data points. This approach most heavily weighs the importance of geographical independence and provides the least bias to closely related points.

Upon review of the revised background data and resultant cleanup criteria, subgrade sampling and analysis data presented in Appendix A indicates that soils exceeding the revised cleanup criteria have been largely removed. Four excavation cells, B-2, B-8, B-10 and B-19 warrant additional excavation and testing due primarily to slightly elevated arsenic concentrations obtained from the 24-36 inch sampling interval. Further excavation in the B-10 cell appears to

be warranted by a slightly elevated cadmium concentration. All other grid locations, or cells, have been cleared based on two consecutive sampling depth intervals.

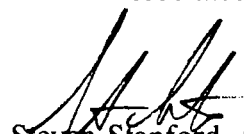
Laterally, areas which remain to be assessed include the grid points B-13, B-14, B-16 and grid points to be extended 20 feet east of B-6, B-7, and B-8. These requirements are based on slightly elevated nickel and or cadmium indicated in the 0-6 inch sampling intervals for grid points B-6, B-7, B-8, B-9 and B-27.

In order to complete the excavation, clearance sampling and closure of the former solids mixing area, ACS proposes to excavate and remove an additional 1.0 feet of soil from the B-2, B-8, B-10 and B-19 grid cells and collect clearance samples from two consecutive depth intervals. Additionally, the lateral areas north and east of the excavated areas will be sampled and analyzed for two consecutive intervals beginning at the ground surface. It is estimated that removal of 70 additional cubic yards of soil will be sufficient to complete the closure, assuming the additional clearance samples indicate acceptable results.

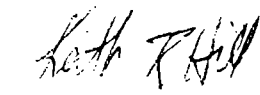
ACS and ATEC request IDEM's review and approval of proposed further cleanup efforts described above. Specifically, concurrence is sought for the use of expanded background data and cleanup objectives as presented in this interim report. IDEM's written concurrence with this approach is requested within thirty (30) days of the receipt of this report. If no reply is provided within this time frame, ACS assumes that the expanded background data base and calculated cleanup objectives will be acceptable for this project.

If there are any questions or if we can be of further assistance in this matter, please contact Mr. Steven Stanford at (219)972-5252.

Sincerely,
ATEC Associates, Inc.



Steven Stanford, CPG
Environmental Division Manager

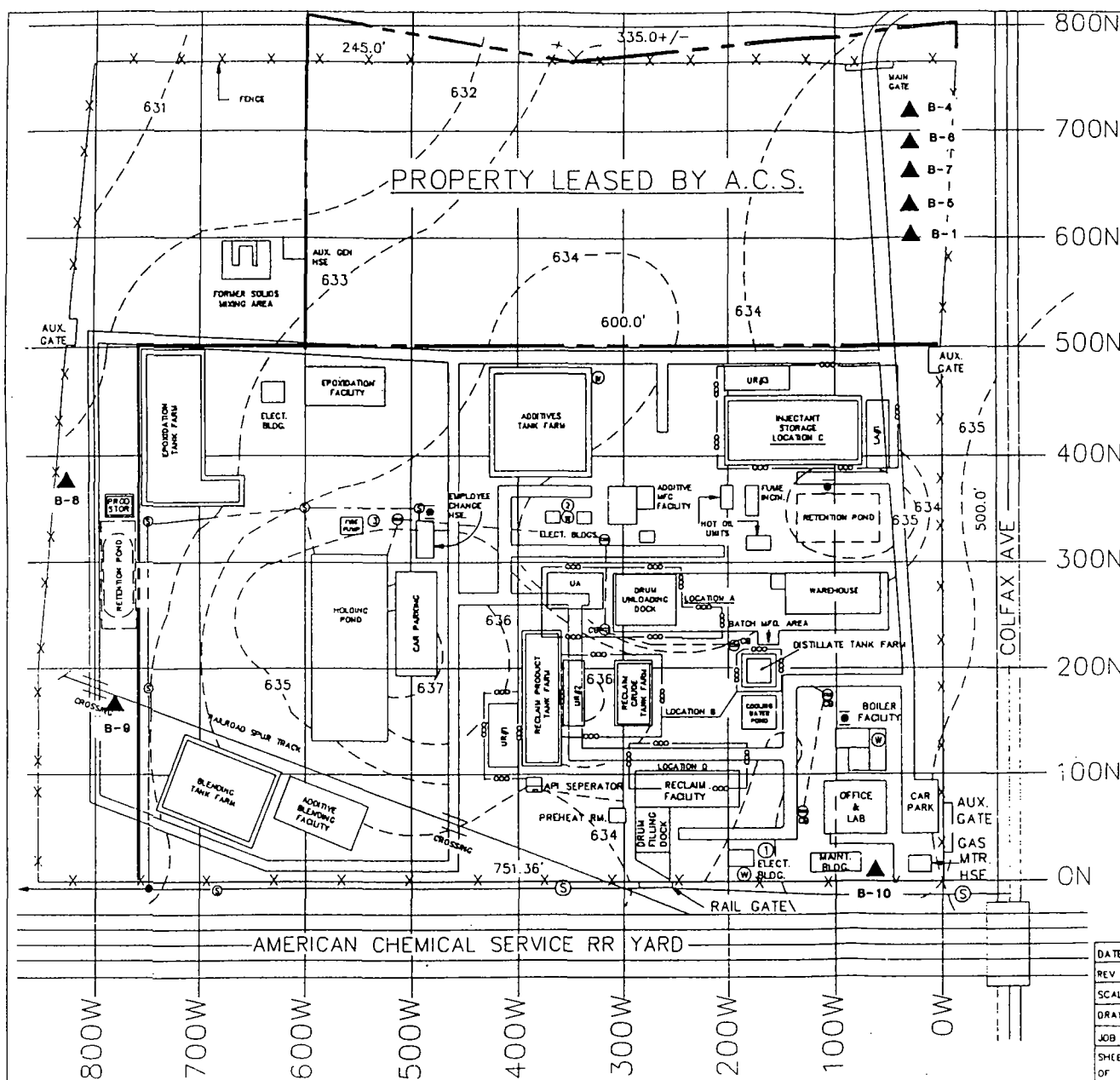


Kenneth R. Hill, Assistant V.P.
District Manager

attachments

cc: Mr. John J. Murphy, ACS

FIGURES



NOTES:

1. SITE PLAN DESCRIPTION: THAT CERTAIN TRACT OR PARCEL OF LAND TOGETHER WITH THE IMPROVEMENTS LOCATED THEREON, WITH THE PRIVILEGES AND APPURTENANCES THEREUNTO BELONGING AND APPERTAINING AT GRIFFITH, LAKE COUNTY, INDIANA, BEING THE SAME SURVEY AFFIXED THERETO, DATED OCTOBER 10, 1967 AND RECORDED OCTOBER 30, 1967, BY DEED RECORD 1358, PAGES 261, 262, 263 AND 264 IN THE RECORDER'S OFFICE OF LAKE COUNTY, INDIANA, MADE BY THE CHESAPEAKE AND OHIO RAILWAY COMPANY, A VIRGINIA CORPORATION, TO AMERICAN CHEMICAL SERVICE, INC., SAID REAL ESTATE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: PART OF SECTION 2, TOWNSHIP 35 NORTH, RANGE 9 WEST OF THE SECOND PRINCIPAL MERIDIAN, DESCRIBED AS BEGINNING AT A POINT 85 FEET NORTHEASTERLY AT RIGHT ANGLES FROM CENTERLINE OF MAIN TRACK OF WABASH SUBDIVISION OF THE CHESAPEAKE AND OHIO RAILWAY AT STATION 7944 + 56, SAID POINT ALSO BEING IN THE WESTERLY LINE OF COLFAX AVENUE; THENCE NORTH 64 53' 30" WEST PARALLEL WITH AND 85' FROM SAID CENTERLINE OF MAIN TRACK 761.36 FEET TO A POINT OPPOSITE STATION 7925 + 17.36; THENCE NORTH 25 06' 30" EAST AT RIGHT ANGLES FROM SAID CENTERLINE OF MAIN TRACK 500 FEET TO A POINT; THENCE SOUTH 64 53' 30" EAST PARALLEL WITH AND 585 FEET FROM SAID CENTERLINE OF MAIN TRACK 761.36 FEET TO A POINT IN THE SAID WESTERLY LINE OF COLFAX AVENUE OPPOSITE STATION 7944 + 56; THENCE SOUTH 25 06' 30" WEST ON SAID WESTERLY LINE OF COLFAX AVENUE, AT RIGHT ANGLES TOWARD SAID CENTERLINE OF MAIN TRACK 500 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.74, MORE OR LESS.
2. TANK FARMS, AS IDENTIFIED, HAVE PERIMETER EARTHEN DIKED WALLS APPROXIMATELY THREE FEET ABOVE THE SURROUNDING GRADE.
3. RETENTION PONDS, AS IDENTIFIED, ARE USED ONLY FOR HEAVY RAIN FALL, AFTER WHICH WATER IS PUMPED TO HOLDING POND. NO STANDING WATER IS ALLOWED.
4. CATCH BASINS (CB) OR YARD DRAINS FLOW INTO POND.
5. HOLDING POND AS SHOWN IS 190' X 70' X 10' DEEP, WITH THE CAPACITY OF APPROXIMATELY 900,000 GALLONS.
6. TOPOGRAPHY, AS SHOWN, IS FROM ELEVATIONS FURNISHED BY OWNER.
7. NONE OF THE AREAS SHOWN IN DRAWINGS S1 AND S2 ARE IN FLOODPLAIN AS ESTABLISHED BY U.S. ARMY CORPS OF ENGINEERS AND AS POSTED IN THE TOWN HALL OF GRIFFITH, INDIANA.

LEGEND:

B-1 BACKGROUND SAMPLING LOCATION

— ACCESS ROADS - MAIN GATE - KEYED CONTROLLED MOTORIZED GATE (AUTO CLOSING).
ROAD BEDS - 6 TO 8" WITH FINE TO 1" GRAVEL #73

⑤ SANITARY SEWER - 12" V.C. PIPE WITH MAN HEADS AS NOTED.

— PROCESS SEWER LINES 4" TO 6" V.A.

UR TANKER UNLOADING RAMP

LA LOADING AREA

UA UNLOADING AREA

○ FIRE FIGHTING STATIONARY HOSE 6% FOAM UNITS

① 1 1/2" LINE 200' RADIUS

② 1 1/2" LINE 300' RADIUS

③ 2 1/2" LINE 350' RADIUS

● PORTABLE WHEEL DRY CHEMICAL (150#) NOTE: THERE ARE SIXTY TWO DRY CHEMICAL HAND EXTINGUISHERS LOCATED ON SITE

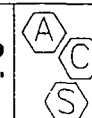
— ○ ○ ○ - HAZARDOUS WASTE LOCATIONS (REFER TO DETAILED DRAWINGS)

* - * - * FENCE LINE 6' HIGH CYCLOPE FENCE W/3 STRANDED ARMS OF BARBED WIRE.

FIGURE 1 - SITE MAP SHOWING FACILITY CONFIGURATION

DATE	10-15-86
REV #1	7/30/87
SCALE	1"=100'
DRAWN	T.N.
JOB	AC0005R2
SHEET	
OF	SHEETS

Micro - Ap
Micro-Application Services
2846 Vivian Street
Portage, Indiana 46368
(219) 762-5890





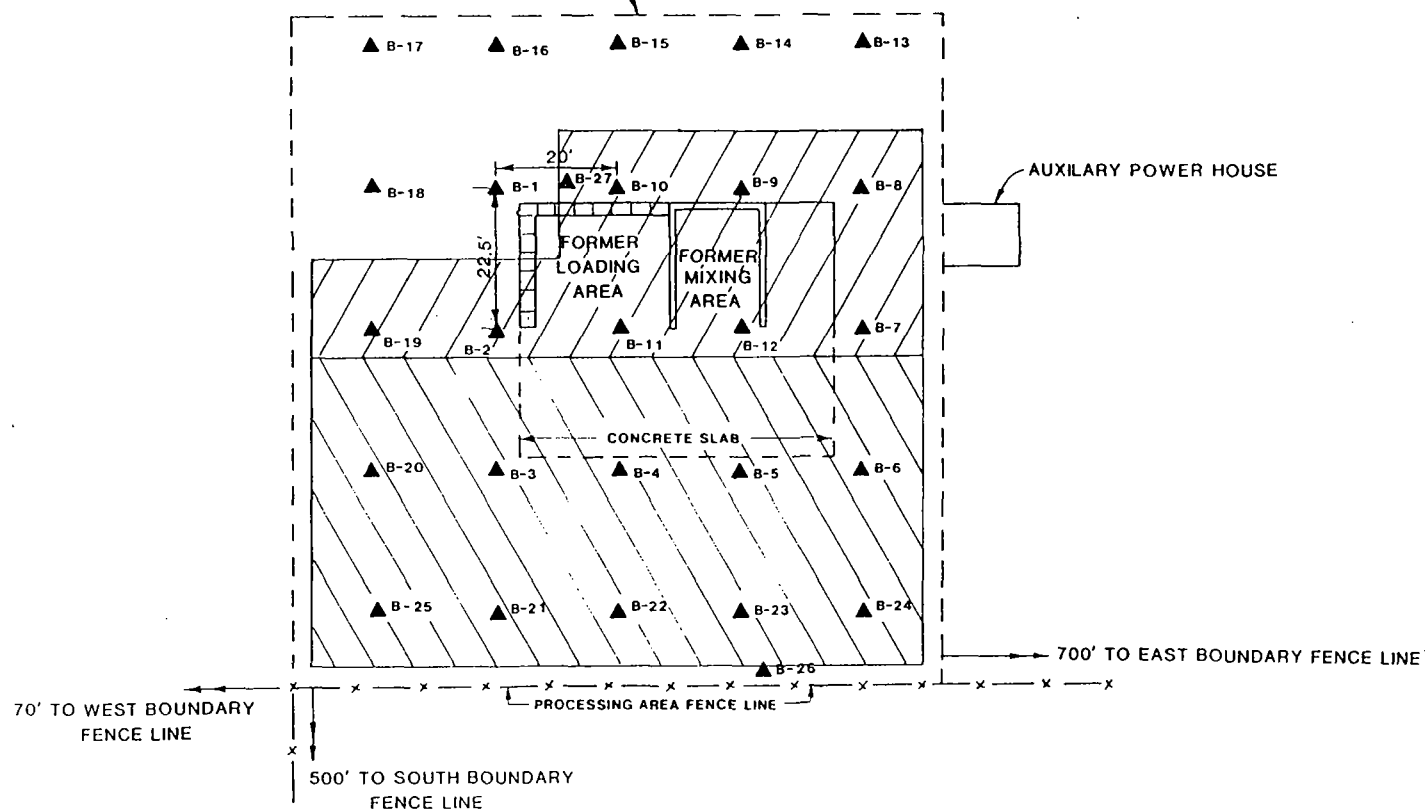
**American
Chemical
Service
Inc.**

P.O. BOX 190 - GRIFFITH, IN 46319

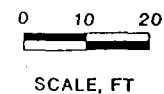
CONTROLLED WORK ZONE

LEGEND

- ▲ - Approximate Location of Sampling Station
-  - 1 Foot Removal of Soil
-  - 2 Foot Removal of Soil



N



SUBSOIL SAMPLING STATIONS
SOIL REMOVAL PLAN

AMERICAN CHEMICAL SERVICES, INC.
GRIFFITH, INDIANA

Date: 7/13/90	File: 8-3202
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Scale: AS SHOWN	FIGURE 2
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1501 E. Main Street • Griffith, IN 46319
Griffith Phone: (219) 924-8890
Chicago Phone: (312) 375-8092

TABLES

TABLE 1
CLEAN-UP OBJECTIVES

BACKGROUND SAMPLE NUMBERS	BARIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	72	17	8	< 5	< 5	12
B4	32	23	16	< 5	9.3	
B5	45	24	31	< 5	9.3	12
B6	120	56	17	6.2	5.4	6.5
B7	160	17	5	5.4	5.5	< 5
MEAN	85.8	27.4	15.4	5.32	6.9	8.88
STD. DEV	53.4	16.3	10.1	0.52	2.2	3.66
CLEAN-UP OBJECTIVE	139	43.7	25.5	5.84	9.1	12.5

BACKGROUND SAMPLE NUMBERS	CADMIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	< 1	< 1	< 1	< 1	< 1	< 1
B4	< 1	< 1	< 1	< 1	< 1	
B5	< 1	< 1	< 1	< 1	< 1	< 1
B6	< 1	2.1	< 1	1.0	1.0	< 1
B7	< 1	< 1	< 1	< 1	< 1	< 1
MEAN	1	1.22	1	1	1	1
STD. DEV	0	0.49	0	0	0	0
CLEAN-UP OBJECTIVE	1	1.71	1	1	1	1

BACKGROUND SAMPLE NUMBERS	CHROMIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	6.7	< 5	< 5	< 5	< 5	< 5
B4	7.2	< 5	< 5	< 5	< 5	
B5	< 5	< 5	< 5	< 5	< 5	< 5
B6	6.4	15	< 5	< 5	< 5	< 5
B7	10	< 5	< 5	< 5	< 5	< 5
MEAN	7.06	7	5	5	5	5
STD. DEV	1.84	4.47	0	0	0	0
CLEAN-UP OBJECTIVE	8.9	11.5	5	5	5	5

TABLE 1
CLEAN-UP OBJECTIVES

BACKGROUND SAMPLE NUMBERS	LEAD					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	34	< 5	< 5	< 5	< 5	8.8
B4	42	7.3	< 5	< 5	7.3	
B5	10	< 5	< 5	< 5	7.3	< 5
B6	8	120	5.7	< 5	7.3	< 5
B7	24	< 5	< 5	5.6	10	12
MEAN	23.6	28.5	5.14	5.12	7.38	7.7
STD. DEV	14.8	51.2	0.31	0.27	1.77	3.38
CLEAN-UP OBJECTIVE	38.4	79.6	5.45	5.39	9.15	11.1

BACKGROUND SAMPLE NUMBERS	SILVER					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	< 5	< 5	< 5	< 5	< 5	< 5
B4	< 5	< 5	< 5	< 5	< 5	
B5	< 5	< 5	< 5	< 5	< 5	< 5
B6	< 5	< 5	< 5	< 5	< 5	< 5
B7	< 5	< 5	< 5	< 5	< 5	< 5
MEAN	5	5	5	5	5	5
STD. DEV	0	0	0	0	0	0
CLEAN-UP OBJECTIVE	5	5	5	5	5	5

BACKGROUND SAMPLE NUMBERS	NICKEL					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	< 5	< 5	< 5	< 5	< 5	< 5
B4	< 5	< 5	< 5	< 5	< 5	
B5	< 5	< 5	< 5	< 5	< 5	< 5
B6	5.6	22	7.2	7.5	7.4	< 5
B7	< 5	< 5	< 5	< 5	< 5	< 5
MEAN	5.12	8.4	5.44	5.5	5.48	5
STD. DEV	0.27	7.6	0.98	1.12	1.07	0
CLEAN-UP OBJECTIVE	5.39	16	6.42	6.62	6.55	5

TABLE 1
CLEAN-UP OBJECTIVES

BACKGROUND SAMPLE NUMBERS	ARSENIC					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	< 5	< 5	< 5	< 5	< 5	< 5
B4	< 5	< 5	< 5	< 5	< 5	
B5	< 5	< 5	< 5	< 5	< 5	< 5
B6	< 5	< 5	< 5	< 5	< 5	< 5
B7	< 5	< 5	< 5	< 5	< 5	< 5
MEAN	5	5	5	5	5	5
STD. DEV	0	0	0	0	0	0
CLEAN-UP OBJECTIVE	5	5	5	5	5	5

BACKGROUND SAMPLE NUMBERS	SELENIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	< 1	< 1	< 1	< 1	< 1	< 1
B4	< 1	< 1	< 1	< 1	< 1	
B5	< 1	< 1	< 1	< 1	< 1	< 1
B6	< 1	< 1	< 1	< 1	< 1	< 1
B7	< 1	< 1	< 1	< 1	< 1	< 1
MEAN	1	1	1	1	1	1
STD. DEV	0	0	0	0	0	0
CLEAN-UP OBJECTIVE	1	1	1	1	1	1

BACKGROUND SAMPLE NUMBERS	MERCURY					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1	< 1	< 1	< 1	< 1	< 1	< 1
B4	< 1	< 1	< 1	< 1	< 1	
B5	< 1	< 1	< 1	< 1	< 1	< 1
B6	< 1	< 1	< 1	< 1	< 1	< 1
B7	< 1	< 1	< 1	< 1	< 1	< 1
MEAN	1	1	1	1	1	1
STD. DEV	0	0	0	0	0	0
CLEAN-UP OBJECTIVE	1	1	1	1	1	1

TABLE 2
EXTENDED BACKGROUND
CLEAN-UP CRITERIA

BACKGROUND SAMPLE NUMBERS	BARIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	85.8	27.4	15.4	5.32	6.9	8.88
B8	235	270	226	92	68	11
B9	103	1542	1760	68	12	10
B10	194	5	29	27	76	16
MEAN	154.45	461.1	507.6	48.08	40.73	11.47
STD. DEV	71.68	730.52	840.46	39.15	36.32	3.14
CLEAN-UP OBJECTIVE	226.13	1191.62	1348.06	87.23	77.05	14.61

✓

BACKGROUND SAMPLE NUMBERS	CADMIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	1	1.22	1	1	1	1
B8	2.3	2.6	1	1	1	1
B9	1	13	13	1	1	1
B10	1.8	1	1	1	1	1
MEAN	1.52	4.45	4	1	1	1
STD. DEV	0.64	5.74	6	0	0	0
CLEAN-UP OBJECTIVE	2.16	10.19	10	1	1	1

ok

BACKGROUND SAMPLE NUMBERS	CHROMIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	7.06	7	5	5	5	5
B8	38	68	22	21	22	15
B9	28	100	97	13	3.9	3.9
B10	32	6.7	6.8	11	9	4.8
MEAN	26.27	45.43	32.7	12.5	10.2	7.18
STD. DEV	13.45	46.42	43.54	6.61	8.29	5.24
CLEAN-UP OBJECTIVE	39.72	91.85	76.24	19.11	18.49	12.42

✓

TABLE 2
EXTENDED BACKGROUND
CLEAN-UP CRITERIA

BACKGROUND SAMPLE NUMBERS	LEAD					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	23.6	28.5	5.14	5.12	7.38	7.7
B8	195	328	74	80	74	13
B9	175	1058	1070	39	13	13
B10	264	46	13	14	47	13
MEAN	164.4	365.13	290.54	34.53	35.35	11.68
STD. DEV	101.31	481.88	520.55	33.54	31.15	2.65
CLEAN-UP OBJECTIVE	265.71	847.01	811.09	68.07	66.5	14.33

BACKGROUND SAMPLE NUMBERS	SILVER					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	5	5	5	5	5	5
B8	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
B9	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
B10	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
MEAN	3.13	3.13	3.13	3.13	3.13	3.13
STD. DEV	1.25	1.25	1.25	1.25	1.25	1.25
CLEAN-UP OBJECTIVE	4.38	4.38	4.38	4.38	4.38	4.38

BACKGROUND SAMPLE NUMBERS	MERCURY					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	1	1	1	1	1	1
B8	4.4	2.2	0.5	0.5	0.5	0.5
B9	1.4	0.5	0.5	0.5	0.5	0.5
B10	1.9	0.5	0.5	0.5	0.5	0.5
MEAN	2.18	1.05	0.63	0.63	0.63	0.63
STD. DEV	1.53	0.8	0.25	0.25	0.25	0.25
CLEAN-UP OBJECTIVE	3.71	1.85	0.88	0.88	0.88	0.88

TABLE 2
EXTENDED BACKGROUND
CLEAN-UP CRITERIA

BACKGROUND SAMPLE NUMBERS	NICKEL					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	5.12	8.4	5.44	5.5	5.48	5
B8	6	8.8	5	5	5	5
B9	5	14	14	5	5	5
B10	5	5	8.3	10	6.7	5
MEAN	5.28	9.05	8.19	6.38	5.55	5
STD. DEV	0.48	3.71	4.14	2.43	0.8	0
CLEAN-UP OBJECTIVE	5.76	12.76	12.33	8.81	6.35	5

ok

BACKGROUND SAMPLE NUMBERS	ARSENIC					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	5	5	5	5	5	5
B8	5	5	5	5	9	15
B9	5	23	15	5	5	5
B10	14	5	5.9	5	7.3	6.1
MEAN	7.25	9.5	7.73	5	6.58	7.78
STD. DEV	4.5	9	4.87	0	1.95	4.84
CLEAN-UP OBJECTIVE	11.75	18.5	12.6	5	8.53	12.62

ok
pushing it

BACKGROUND SAMPLE NUMBERS	SELENIUM					
	SOIL LEVELS					
	S1	S2	S3	S4	S5	S6
B1,4,5,6,7 MEAN	1	1	1	1	1	1
B8	<5	<5	<5	<5	<5	<5
B9	<5	<5	<5	<5	<5	<5
B10	<5	<5	<5	<5	<5	<5
MEAN	4	4	4	4	4	4
STD. DEV	2	2	2	2	2	2
CLEAN-UP OBJECTIVE	6	6	6	6	6	6

ok

APPENDIX A



Division of ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

June 13, 1991

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

ATEC Environmental Services
2646 Highway Avenue
Highland, IN 46322

Re: Thirteen Soil Samples for Total Metals
Twenty-Four Hour Turnaround
ATEC File No. 52-83202

Dear Mr. Strimbu:


Enclosed are the results of the Chemical Analyses for the thirteen soil samples which were submitted to the ATEC Environmental/Analytical Testing Division on June 11, 1991, on behalf of American Chemical.

Metals were analyzed on a Perkin-Elmer Zeeman/5100 PC Atomic Absorption Spectrophotometer according to the 7000 series of the methods outlined in SW 846 and a Leeman PS1000 ICAP according to SW 846 Method 6010.

All associated quality control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC Policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

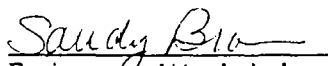
REPORT OF TEST RESULTS

Client: ATEC Associates, Inc. - Highland

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 11, 1991
Date Received: June 11, 1991
Date Analyzed: June 11, 12, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 910259
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-120</u>	<u>B-103</u>	<u>B-104</u>		
Barium	52	17	18	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	7.5	5.7	4.3	2.5	6010
Lead	17	5.8	8.2	2.5	7421
Silver	<2.5	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Arsenic	<2.5	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Mercury	<0.50	<0.50	<0.50	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division


REPORT OF TEST RESULTS

Client: ATEC Associates, Inc. - Highland

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 11, 1991
Date Received: June 11, 1991
Date Analyzed: June 11, 12, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 910259
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-105</u>	<u>B-106</u>	<u>B-125</u>		
Barium	10	70	27	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	3.4	7.2	4.1	2.5	6010
Lead	3.9	28	3.0	2.5	7421
Silver	<2.5	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Arsenic	<2.5	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Mercury	<0.50	<0.50	<0.50	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

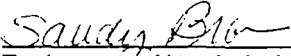
REPORT OF TEST RESULTS

Client: ATEC Associates, Inc. - Highland

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 11, 1991
Date Received: June 11, 1991
Date Analyzed: June 11, 12, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 910259
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-121</u>	<u>B-122</u>	<u>B-123</u>		
Barium	22	10	22	2.5	6010
Cadmium	< 1.0	< 1.0	< 1.0	1.0	6010
Chromium	4.9	4.4	4.5	2.5	6010
Lead	6.5	< 2.5	7.1	2.5	7421
Silver	< 2.5	< 2.5	< 2.5	2.5	6010
Nickel	< 5.0	< 5.0	< 5.0	5.0	6010
Arsenic	< 2.5	< 2.5	< 2.5	2.5	7060
Selenium	< 1.0	< 1.0	< 1.0	1.0	7740
Mercury	< 0.50	< 0.50	< 0.50	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

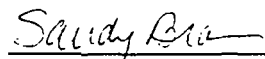
REPORT OF TEST RESULTS

Client: ATEC Associates, Inc. - Highland

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 11, 1991
Date Received: June 11, 1991
Date Analyzed: June 11, 12, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 910259
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-124</u>	<u>B-201</u>	<u>B-200</u>		
Barium	8.6	20	12	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	3.1	4.8	4.3	2.5	6010
Lead	<2.5	8.8	2.7	2.5	7421
Silver	<2.5	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Arsenic	<2.5	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Mercury	<0.50	<0.50	<0.50	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

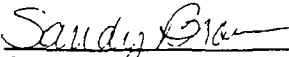
REPORT OF TEST RESULTS

Client: ATEC Associates, Inc. - Highland

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 11, 1991
Date Received: June 11, 1991
Date Analyzed: June 11, 12, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 910259
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u> B-126	QUANTI- TATION <u>LIMIT</u>	SW 846 <u>METHOD NO.</u>
Barium	8.0	2.5	6010
Cadmium	<1.0	1.0	6010
Chromium	2.8	2.5	6010
Lead	<2.5	2.5	7421
Silver	<2.5	2.5	6010
Nickel	<5.0	5.0	6010
Arsenic	<2.5	2.5	7060
Selenium	<1.0	1.0	7740
Mercury	<0.50	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

[illegible]

ATEC[®] Environmental Consultants

Division of ATEC Associates, Inc.

2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

June 14, 1991

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

ATEC Environmental Services
2646 Highway Avenue
Highland, IN 46322

Re: Eleven Soil and Three Water Samples
for Total Metal Analysis
ATEC File No. 52-83202

Dear Mr. Strimbu:

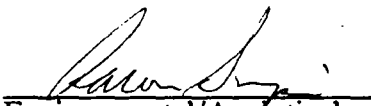
Enclosed are the results of the Chemical Analyses for the fourteen soil and water samples which were submitted to the ATEC Environmental/Analytical Testing Division on June 12, 1991, on behalf of American Chemical Company.

Metals were analyzed on a Perkin-Elmer Zeeman/5100 PC Atomic Absorption Spectrophotometer according to the 7000 series of the methods outlined in SW 846 and a Leeman PS 1000 ICAP according to SW 846 Method 6010.

All associated quality control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC Policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

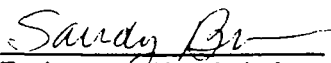
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: June 12, 1991
Date Received: June 12, 1991
Date Analyzed: June 12, 13, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 52-83202
ATEC Project Number: 910264

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-108</u>	<u>B-109</u>	<u>B-110</u>		
Barium	43	19	15	2.5	6010
Cadmium	<1.0	<1.0	1.0	1.0	6010
Chromium	<2.5	2.9	3.0	2.5	6010
Silver	<2.5	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Lead	10	7.8	4.6	2.5	7421
Arsenic	<2.5	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Mercury	<0.5	<0.5	<0.5	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: June 12, 1991
Date Received: June 12, 1991
Date Analyzed: June 12, 13, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 52-83202
ATEC Project Number: 910264

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	B-127	B-107	B-112		
Barium	19	44	27	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	4.3	6.6	5.0	2.5	6010
Silver	<2.5	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Lead	6.4	24	25	2.5	7421
Arsenic	<2.5	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Mercury	<0.5	<0.5	<0.5	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.



Environmental/Analytical
Testing Division


REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: June 12, 1991
Date Received: June 12, 1991
Date Analyzed: June 12, 13, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 52-83202
ATEC Project Number: 910264

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-111</u>	<u>B-102</u>	<u>B-119</u>		
Barium	44	12	17	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	8.5	3.8	3.6	2.5	6010
Silver	<2.5	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Lead	37	9.0	6.0	2.5	7421
Arsenic	<2.5	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Mercury	<0.5	<0.5	<0.5	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

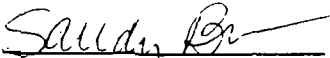
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: June 12, 1991
Date Received: June 12, 1991
Date Analyzed: June 12, 13, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 52-83202
ATEC Project Number: 910264

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER		QUANTI- TATION LIMIT	SW 846 METHOD NO.
	B-202	B-203		
Barium	23	19	2.5	6010
Cadmium	<1.0	<1.0	1.0	6010
Chromium	3.7	5.8	2.5	6010
Silver	<2.5	<2.5	2.5	6010
Nickel	<5.0	<5.0	5.0	6010
Lead	6.5	10	2.5	7421
Arsenic	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	1.0	7740
Mercury	<0.5	<0.5	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental Analytical
Testing Division

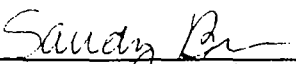
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Water
Sample Taken By: BS
Date Sampled: June 12, 1991
Date Received: June 12, 1991
Date Analyzed: June 12, 13, 1991
Analyst: AD, SLB, WN
ATEC Lab Number: 52-83202
ATEC Project Number: 910264

PARAMETER (unit in mg/L unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	B-204	B-205	B-206		
Barium	0.07	0.06	0.06	0.05	6010
Cadmium	<0.02	<0.02	<0.02	0.02	6010
Chromium	<0.05	<0.05	<0.05	0.05	6010
Silver	<0.05	<0.05	<0.05	0.05	6010
Nickel	<0.10	<0.10	<0.10	0.10	6010
Lead	<0.05	0.05	0.05	0.05	7421
Arsenic	<0.05	<0.05	<0.05	0.05	7060
Selenium	<0.02	<0.02	<0.02	0.02	7740
Mercury	<0.002	<0.002	<0.002	0.002	7470

Respectfully submitted,
ATEC Associates, Inc.


Environmental Analytical
Testing Division

PROJ. NO.		PROJECT NAME		LAB PROJ. NO.		LABORATORY ANALYSIS										SAMPLE LOCATION / REMARKS			
8-3202		CLIENT AMERICAN CHEMICAL																	
SAMPLERS: (Signature)																			
R. Strimbu																			
SAMPLING METHOD			COMPOSITE	GRAB	WATER	SOIL	FILTERED	ACIDIFIED	ICED	NUMBER OF CONTAINERS	LAB I.D. NUMBER	VOLATILE ORGANICS BTX & E	TOTAL HYDROCARBONS PCBS	E.P. TOXIC METALS	TOTAL METALS (8) + NICKEL	IGNITABILITY			
SAMPLE I.D. NO.	DATE	TIME																	
B-108	6/12/91	2:45PM		X		X				X					X			910264-1	
B-109				X		X				X					X			2	
B-110				X		X				X					X			3	
B-127				X		X				X					X			4	
B-107				X		X				X					X			5	
B-112				X		X				X					X			6	
B-111				X		X				X					X			7	
B-102				X		X				X					X			8	
B-119		2:45PM		X		X				X					X			9	
B-202		2:00PM		X		X				X					X			10	
B-203		3:00AM		X		X				X					X			11	
B-204		3PM		X	X					X					X			12	
B-205	V	3PM		X	X					X					X			13	
B-206	6/12/91	3PM		X	X					X					X			14	
Relinquished by: (Signature)				Date / Time		Received by: (Signature)				Relinquished by: (Signature)				Date / Time		Received by: (Signature)			
R Strimbu				6/12/91 3:30PM															
Relinquished by: (Signature)				Date / Time		Received for Laboratory by: (Signature)				Date / Time		Project Manager / Phone #:							
						Joe Khalid				6/12/91 3:31PM									



Division of ATEC Associates, Inc.

2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

June 27, 1991

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

ATEC Environmental Services
2646 Highway Avenue
Highland, IN 46322

Re: Four Soil Samples for Metal Analysis
48 Hour Turnaround
ATEC File No. 52-83202

Dear Mr. Strimbu:

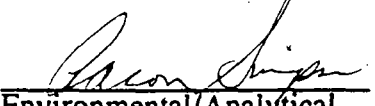
Enclosed are the results of the Chemical Analyses for the four soil samples which were submitted to the ATEC Environmental/Analytical Testing Division on June 20, 1991, on behalf of American Chemical.

Metals were analyzed on a Perkin-Elmer Zeeman/5100 PC Atomic Absorption Spectrophotometer according to the 7000 series of the methods outlined in SW 846 and a Leeman PS 1000 ICAP according to SW 846 Method 6010.

All associated quality control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC Policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 20, 1991
Date Received: June 20, 1991
Date Analyzed: June 21, 22, 1991
Analyst: AD
Verified By: SLB
ATEC Lab Number: 910284
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u> B-123A	QUANTI- TATION LIMIT	SW 846 METHOD NO.
Barium	5.8	2.5	6010
Chromium	3.0	2.5	6010
Lead	<2.5	2.5	7421

Respectfully submitted,
ATEC Associates, Inc.

Sandy Brown
Environmental/Analytical
Testing Division

REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 20, 1991
Date Received: June 20, 1991
Date Analyzed: June 21, 22, 1991
Analyst: AD
Verified By: SLB
ATEC Lab Number: 910284
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-106A</u>	<u>B-120A</u>	<u>B-121A</u>		
Barium	13	4.3	4.9	2.5	6010
Chromium	3.9	3.3	2.8	2.5	6010
Lead	2.5	<2.5	<2.5	2.5	7421

Respectfully submitted,
ATEC Associates, Inc.

Sandy Blawie
Environmental/Analytical
Testing Division

ROJ. NO. 8-3202	PROJECT NAME AMERICAN CHEMICAL	LAB PROJ. NO.	LABORATORY ANALYSIS
CLIENT			

R Strinbu

GRAB

[illegible][illegible]

ATEC
Environmental
Consultants
Division of ATEC Associates, Inc.
2546 Highway Avenue

Division of ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322
219-972-5252 • FAX 312-375-8649

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
R Strimbu	6/20/91 11:15AM				
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Project Manager / Phone #:	
		Warren R. Novak	6-20-91 11:15AM		



Division of ATEC Associates, Inc.,
2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

July 5, 1991

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

ATEC Environmental Services
2646 Highway Avenue
Highland, IN 46322

Re: Redigestion and Reanalysis of Barium
for One Soil Sample
ATEC File No. 52-83202

Dear Mr. Strimbu:

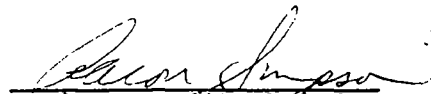
Enclosed are the results of the Chemical Analyses for the one soil sample which was submitted to the ATEC Environmental/Analytical Testing Division on June 20, 1991, on behalf of American Chemical.

Metals were analyzed on a Leeman PS 1000 ICP according to SW 846 Method 6010.

All associated quality control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC Policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: RS
Date Sampled: June 20, 1991
Date Received: June 20, 1991
Date Analyzed: July 1, 1991
Analyst: AD
Verified By: SLB
ATEC Lab Number: 910284
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u> B-106A	QUANTI- TATION <u>LIMIT</u>	SW 846 <u>METHOD NO.</u>
Barium	13	2.5	6010

Respectfully submitted,
ATEC Associates, Inc.

Sandy Brown
Environmental/Analytical
Testing Division

ATEC Environmental Consultants

Division of ATEC Associates, Inc.

2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

July 29, 1991

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

ATEC Environmental Services
2646 Highway Avenue
Highland, IN 46322

**Re: Nine Soil Samples for
Total Metal Analyses
ATEC File No. 52-83202**

Dear Mr. Strimbu:

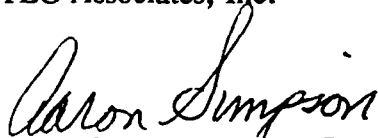
Enclosed are the results of the Chemical Analyses for the nine soil samples which were submitted to the ATEC Environmental/Analytical Testing Division on July 11, 1991, on behalf of American Chemical.

Metals were analyzed on a Perkin-Elmer Zeeman/5100 PC Atomic Absorption Spectrophotometer according to the 7000 series of the methods outlined in SW 846 and a Leeman PS1000 ICP according to SW 846 Method 6010.

All associated quality control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC Policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.



Environmental/Analytical
Testing Division

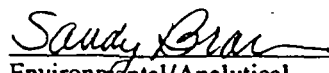
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: July 11, 1991
Date Received: July 11, 1991
Date Analyzed: July 15, 19, 22, 23, 24, 1991
Analyst: WN, AD, SLB
ATEC Lab Number: 910321
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	B-109A	B-107A	B-127A		
<u>TOTAL METALS</u>					
Barium	19.7	9.70	17.8	2.5	6010
Lead	12.6	<2.5	19.8	2.5	7421
Chromium	6.90	4.40	4.35	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Arsenic	4.45	<2.5	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Silver	<2.5	<2.5	<2.5	2.5	6010
Mercury	<0.5	<0.5	<0.5	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: July 11, 1991
Date Received: July 11, 1991
Date Analyzed: July 15, 19, 22, 23, 24, 1991
Analyst: WN, AD, SLB
ATEC Lab Number: 910321
ATEC Project Number: 52-83202

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	B-108A	B-119A	B-102A		
TOTAL METALS					
Barium	18.3	14.0	12.6	2.5	6010
Lead	3.60	<2.5	3.22	2.5	7421
Chromium	9.05	8.85	8.15	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Arsenic	7.94	6.49	8.15	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Silver	<2.5	<2.5	<2.5	2.5	6010
Mercury	<0.5	<0.5	<0.5	0.5	7471

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

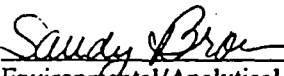
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
 Sample Taken By: BS
 Date Sampled: July 11, 1991
 Date Received: July 11, 1991
 Date Analyzed: July 15, 19, 22, 23, 24, 1991
 Analyst: WN, AD, SLB
 ATEC Lab Number: 910321
 ATEC Project Number: 52-83202

ARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>B-112A</u>	<u>B-110A</u>	<u>B-111A</u>		
<u>TOTAL METALS</u>					
Barium	12.4	40.2	9.65	2.5	6010
Lead	<2.5	32.5	3.11	2.5	7421
Chromium	7.00	5.45	7.00	2.5	6010
Cadmium	<1.0	1.20	<1.0	1.0	6010
Nickel	<5.0	<5.0	<5.0	5.0	6010
Arsenic	<2.5	2.80	<2.5	2.5	7060
Selenium	<1.0	<1.0	<1.0	1.0	7740
Silver	<2.5	<2.5	<2.5	2.5	6010
Mercury	<0.5	<0.5	<0.5	0.5	7471

Respectfully submitted,
 ATEC Associates, Inc.


 Environmental/Analytical
 Testing Division

[illegible]

ATEC Environmental Consultants
Division of ATEC Associates, Inc.
2646 Highway Avenue

APPENDIX B

ATEC Environmental Consultants
Division of ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322
[219] 972-5252, [312] 375-9092
FAX # [312] 375-8649

Solid & Hazardous Waste Site Assessments
Remedial Design & Construction
Underground Tank Management
Asbestos Surveys & Analysis
Hydrogeologic Investigations & Monitoring
Analytical Testing / Chemistry
Industrial Hygiene / Hazard Communication
Environmental Audits & Permitting
Exploratory Drilling & Monitoring Wells

August 23, 1991

ATEC Environmental Services
2646 Highway Avenue
Highland, IN 46322

**Re: Eighteen Soil Samples for Total Metal Analysis
One Week Rush
ATEC File No. 52-17175**

Dear Mr. Strimbu:

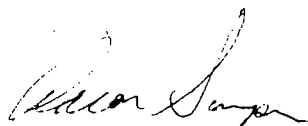
Enclosed are the results of the Chemical Analyses for the 18 soil samples which were submitted to the ATEC Environmental/Analytical Testing Division on August 15, 1991, on behalf of American Chemical.

Metals were analyzed on a Perkin-Elmer Zeeman/5100 PC Atomic Absorption Spectrophotometer according to the 7000 series of the methods outlined in SW 846 and a Leeman PS 1000 ICP according to SW 846 Method 6010.

All associated quality control information will be maintained in the Testing Division files, a copy of which can be forwarded to you upon request. After a thirty-day period, a fee will be assessed for this additional information.

It has been a pleasure serving you and, as always, if there are any questions concerning these results or the ATEC Policies, please feel free to contact me.

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division


REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: August 15, 1991
Date Received: August 15, 1991
Date Analyzed: August 16, 19, 20, 21, 22, 1991
Analyst: WN, AD
Verified By: SLB
ATEC Lab Number: 910373
ATEC Project Number: 52-17175

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>8-1</u>	<u>8-2</u>	<u>8-3</u>		
<u>TOTAL METALS</u>					
Arsenic	<5.0	<5.0	<5.0	5.0	6010
Barium	235	270	226	2.5	6010
Cadmium	2.3	2.6	<1.0	1.0	6010
Chromium	38	68	22	2.5	6010
Lead	195	328	74	13	6010
Mercury	4.4	2.2	<0.5	0.5	7471
Nickel	6.0	8.8	<5.0	5.0	6010
Selenium	<5.0	<5.0	<5.0	5.0	6010
Silver	<2.5	<2.5	<2.5	2.5	6010

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

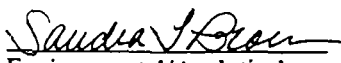
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: August 15, 1991
Date Received: August 15, 1991
Date Analyzed: August 16, 19, 20, 21, 22, 1991
Analyst: WN, AD
Verified By: SLB
ATEC Lab Number: 910373
ATEC Project Number: 52-17175

PARAMETER (unit in mg/kg unless noted)	<u>SAMPLE I.D. NUMBER</u>			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>8-4</u>	<u>8-5</u>	<u>8-6</u>		
<u>TOTAL METALS</u>					
Arsenic	<5.0	9.0	15	5.0	6010
Barium	92	68	11	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	21	22	15	2.5	6010
Lead	80	74	<13	13	6010
Mercury	<0.5	<0.5	<0.5	0.5	7471
Nickel	<5.0	<5.0	<5.0	5.0	6010
Selenium	<5.0	<5.0	<5.0	5.0	6010
Silver	<2.5	<2.5	<2.5	2.5	6010

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

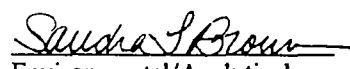
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: August 15, 1991
Date Received: August 15, 1991
Date Analyzed: August 16, 19, 20, 21, 22, 1991
Analyst: WN, AD
Verified By: SLB
ATEC Lab Number: 910373
ATEC Project Number: 52-17175

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	<u>9-1</u>	<u>9-2</u>	<u>9-3</u>		
<u>TOTAL METALS</u>					
Arsenic	<5.0	23	15	5.0	6010
Barium	103	1542	1760	2.5	6010
Cadmium	1.0	13	13	1.0	6010
Chromium	28	100	97	2.5	6010
Lead	175	1058	1070	13	6010
Mercury	1.4	<0.5	<0.5	0.5	7471
Nickel	<5.0	14	14	5.0	6010
Selenium	<5.0	<5.0	<5.0	5.0	6010
Silver	<2.5	<2.5	<2.5	2.5	6010

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division


REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: August 15, 1991
Date Received: August 15, 1991
Date Analyzed: August 16, 19, 20, 21, 22, 1991
Analyst: WN, AD
Verified By: SLB
ATEC Lab Number: 910373
ATEC Project Number: 52-17175

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	9-4	9-5	9-6		
TOTAL METALS					
Arsenic	<5.0	<5.0	<5.0	5.0	6010
Barium	68	12	10	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	13	3.9	3.9	2.5	6010
Lead	39	<13	<13	13	6010
Mercury	<0.5	<0.5	<0.5	0.5	7471
Nickel	<5.0	<5.0	<5.0	5.0	6010
Selenium	<5.0	<5.0	<5.0	5.0	6010
Silver	<2.5	<2.5	<2.5	2.5	6010

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division


REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
 Sample Taken By: BS
 Date Sampled: August 15, 1991
 Date Received: August 15, 1991
 Date Analyzed: August 16, 19, 20, 21, 22, 1991
 Analyst: WN, AD
 Verified By: SLB
 ATEC Lab Number: 910373
 ATEC Project Number: 52-17175

PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	10-1	10-2	10-3		
TOTAL METALS					
Arsenic	14	<5.0	5.9	5.0	6010
Barium	194	5.0	29	2.5	6010
Cadmium	1.8	<1.0	<1.0	1.0	6010
Chromium	32	6.7	6.8	2.5	6010
Lead	264	46	<13	13	6010
Mercury	1.9	<0.5	<0.5	0.5	7471
Nickel	<5.0	<5.0	8.3	5.0	6010
Selenium	<5.0	<5.0	<5.0	5.0	6010
Silver	<2.5	<2.5	<2.5	2.5	6010

Respectfully submitted,
 ATEC Associates, Inc.


 Environmental/Analytical
 Testing Division

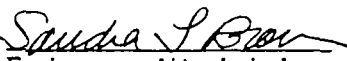
REPORT OF TEST RESULTS

Client: American Chemical

Sample Matrix: Soil
Sample Taken By: BS
Date Sampled: August 15, 1991
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Date Analyzed: August 16, 19, 20, 21, 22, 1991
Analyst: WN, AD
Verified By: SLB
ATEC Lab Number: 910373
ATEC Project Number: 52-17175


PARAMETER (unit in mg/kg unless noted)	SAMPLE I.D. NUMBER			QUANTI- TATION LIMIT	SW 846 METHOD NO.
	10-4	10-5	10-6		
TOTAL METALS					
Arsenic	<5.0	7.3	6.1	5.0	6010
Barium	27	76	16	2.5	6010
Cadmium	<1.0	<1.0	<1.0	1.0	6010
Chromium	11	9.0	4.8	2.5	6010
Lead	14	47	<13	13	6010
Mercury	<0.5	<0.5	<0.5	0.5	7471
Nickel	10	6.7	<5.0	5.0	6010
Selenium	<5.0	<5.0	<5.0	5.0	6010
Silver	<2.5	<2.5	<2.5	2.5	6010

Respectfully submitted,
ATEC Associates, Inc.


Environmental/Analytical
Testing Division

CHAIN OF CUSTODY RECORD

PROJ. NO. 1-7175		PROJECT NAME CLIENT AMERICAN CHEMICAL										LAB PROJ. NO.		LABORATORY ANALYSIS									
SAMPLERS: (Signature) R. Strimbu												<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOLATILE ORGANICS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTX & E</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TOTAL HYDROCARBONS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PCBS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">E.P. TOXIC METALS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TOTAL METALS (8) + NICKEL</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">IGNITABILITY</div> </div>											
SAMPLING METHOD GRAB			COMPOSITE	GRAB	WATER	SOIL		FILTERED	ACIDIFIED	ICED												NUMBER OF CONTAINERS	LAB I.D. NUMBER
SAMPLE I.D. NO.	DATE	TIME																					
8-1	8/15/91	10:00		X		X				X		1											
8-2		10:07		X		X				X		1											
8-3		10:15		X		X				X		1											
8-4		10:21		X		X				X		1											
8-5		10:24		X		X				X		1											
8-6		10:36		X		X				X		1											
9-1		10:51		X		X				X		1											
9-2		10:59		X		X				X		1											
9-3		11:07		X		X				X		1											
9-4		11:18		X		X				X		1											
9-5		11:26		X		X				X		1											
9-6		11:31		X		X				X		1											
10-1		11:45		X		X				X		1											
10-2		11:52		X		X				X		1											
10-3		11:58		X		X				X		1											
10-4		12:10		X		X				X		1											
10-5		12:15		X		X				X		1											
10-6		12:21		X		X				X		1											
Relinquished by: (Signature) R. Strimbu			Date / Time 8/15/91 12:45		Received by: (Signature) Joe Khalid				Relinquished by: (Signature)				Date / Time		Received by: (Signature)								
Relinquished by: (Signature)			Date / Time		Received for Laboratory by: (Signature)				Date / Time		Project Manager / Phone #:												


ATEC Environmental Services
 Division of ATEC Associates, Inc.
 5150 East 65th Street
 Indianapolis, Indiana 46220-4871
 (317) 849-4990, FAX # (317) 849-4278